SW RP03
SYSTEM MANUAL

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Introduction

The Seiwa SW RP03 remote data repeater is capable of displaying over 200 standard NMEA 0183 and proprietary sentences. The SW RP03 can monitor up to 4 separate data channels and can be trained to learn new sentences. The SW RP03 is trainable to recognize and display new NMEA 0183 sentences not currently defined.
Up to 12 sentence ID.s can be stored in a list of often viewed sentences. You can select a sentence from this list quickly using the ▲ and ▼ keys to scroll through the selections. You can add and delete sentences to/from this list as often as desired.

Five levels of backlighting can be selected and remotely switched ON/OFF. All settings are automatically saved to non-volatile memory.

The SW RP03 works on both 12 and 24 VDC systems and with its large display digits draws only .035 amps and only .075 amps with full backlighting.SS

Specifications

Power supply: 9.5 to 33 VDC, 35 mA nominal
Operating temperature: 32 to 122 F° (0 to 50 C°)
Size: 4.3” x 4.3. x 3.5. deep (110 x 110 x 89 mm).
Display: 4 digit LCD, 5 levels of backlighting.
Input Format: NMEA 0183, standard and proprietary sentences.
Baud Rate: 4800
Input Channels: 4
Data Input voltage range: 0 to 5 V Nominal, -20V to +20V maximum.
Data Memory: Storage for 10 new sentences (may be overwritten).

Installation

Before starting the installation, please read this entire section first. Finger tighten the screws that mount the instrument bracket - It is not necessary or recommended to use tools.
For mounting the instrument, see the Figure 1
1 Connect the various wires as shown in Figure 2 and 3.
1 Carefully check all your wiring against figures 2 and 3 and then mount the instrument in the hole. Use only finger tension to tighten the bracket hold-down nuts

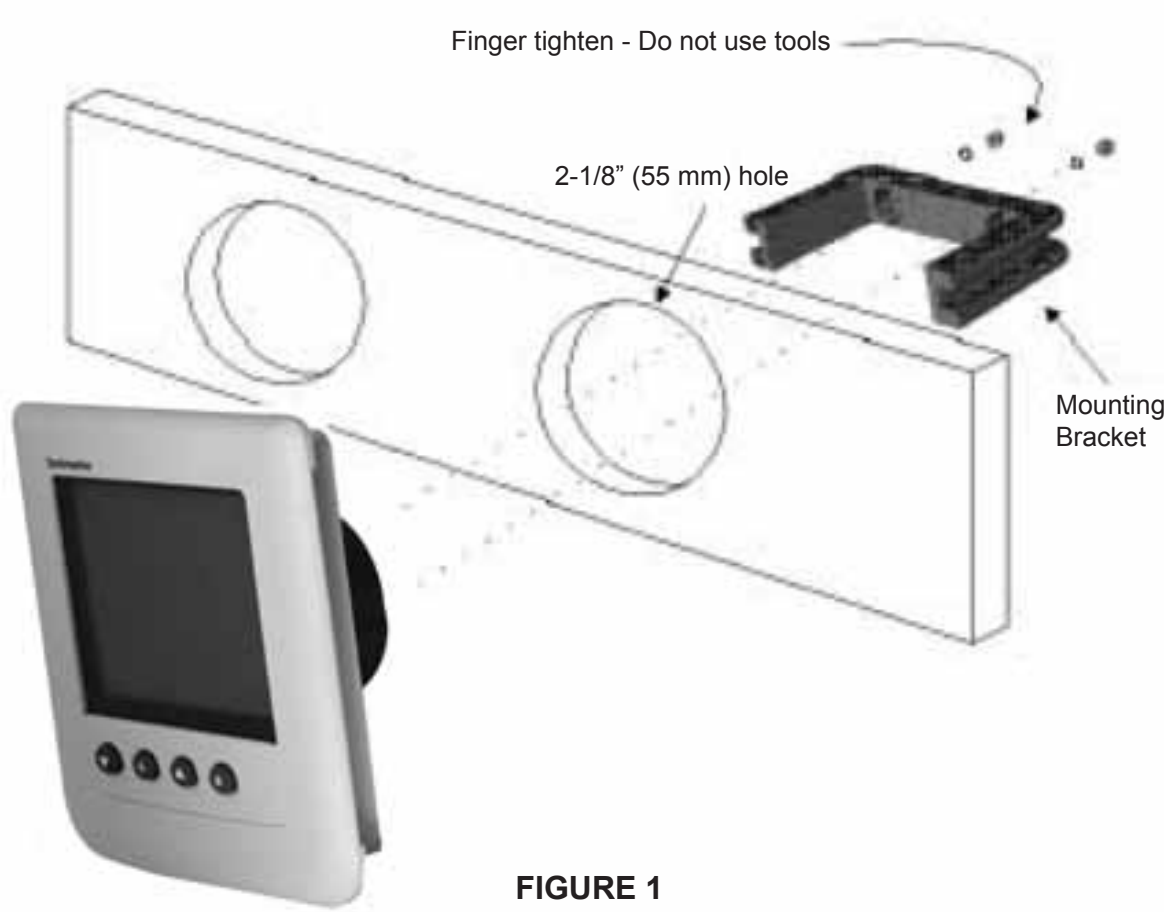
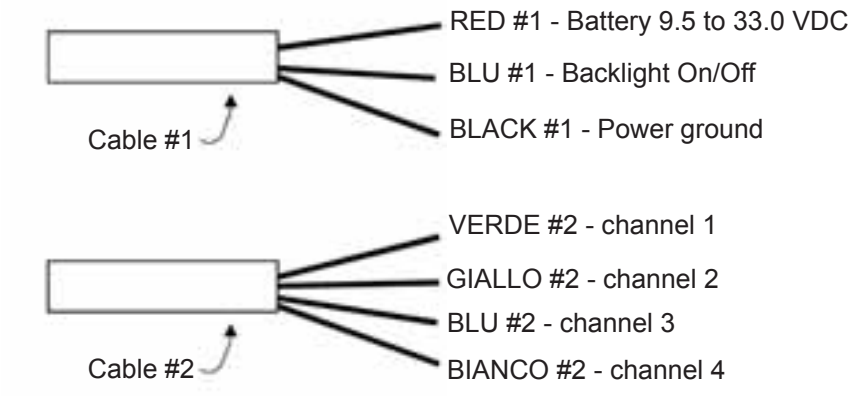
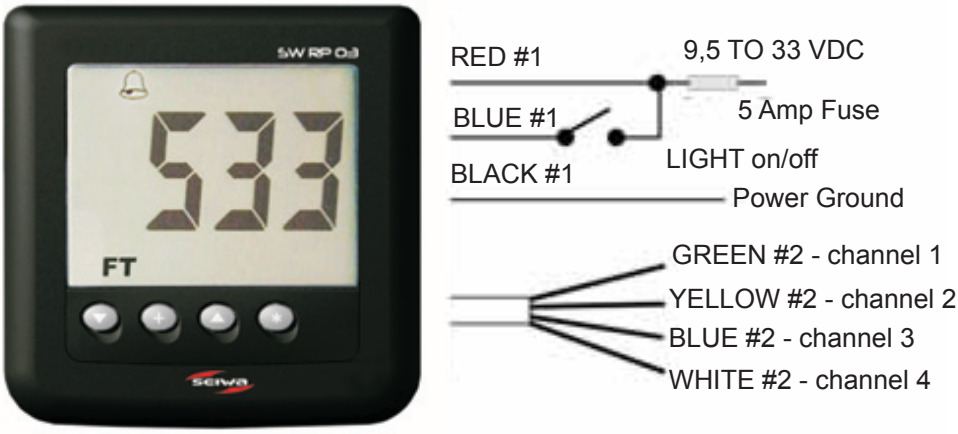


FIGURE 1

FIGURA 2


RED #1 - Battery 9.5 to 33.0 VDC
BLU #1 - Backlight On/Off
BLACK #1 - Power ground
Cable #1
VERDE #2 - channel 1
GIALLO #2 - channel 2
BLU #2 - channel 3
BIANCO #2 - channel 4
Cable #2



Operation

Key Functions

The ▼, ✚ and ▲ keys are used to select and set backlight levels, and set/change constants such as which NMEA sentences to display, select a data channel, save and delete NMEA sentences from the favorites list and prepare the instrument to receive new sentences from a PC. New information is automatically saved to non-volatile memory.

Backlight Intensity

Press ✚ the key 1/2 second to adjust the backlight level for night viewing.
Each time you press the ✚ key 1/2 second, the level will get brighter 1, 2, 3, 4, OFF, 1, 2, ... etc.
The blue wire be switched to +12/24V for the backlights to work and offers external backlight ON/OFF control, if the ON/OFF control is not required, connect the blue wire to +12/24VDC permanently.

Selecting a NMEA Sentence to Display

Up to 12 sentences can be stored in a list of often viewed sentences. You can select a sentence from the list using the ▼ and ▲ keys. SW RP03 comes pre-programmed with the following list:

142 $SDDPT DEPTH RELATIVE TO TRANSDUCER MTRS
163 $VWVHW SPEED KNOTS
160 $VWMTW WATER TEMPERATURE DEGREES
98 $GPRMC COURSE OVER GROUND DEGREES TRUE
36 $AGWNC DISTANCE WAYPT TO WAYPT N.MILES
125 $PBVE T-30 TEMPERATURE DEG. FAHRENHEIT
129 $PBVE OP-30 PRESSURE P.S.I.
124 $PBVE RH-30 ENGINE RPM

You can add and delete sentences to/from this list as often as desired. Pressing the or key will step you through the list. "- - - -" will be displayed until the selected sentence is found on one of the channels.

Adding A Sentence To the List

Press and hold the ✚ and ▲ keys for 10 seconds until a long beep is heard. "c011" is displayed. Use the ▼ and ▲ keys to select a sentence from Table 1. Once the desired table entry is displayed, hold down the ✚ key for 1/2 second to save the sentence to the list. The SW RP03 will immediately start searching for the new sentence on all four channels.

If "FULL" is displayed in place of "c011", a sentence will first have to be deleted from the list (see "Deleting A Sentence From the List").

Deleting A Sentence From the List

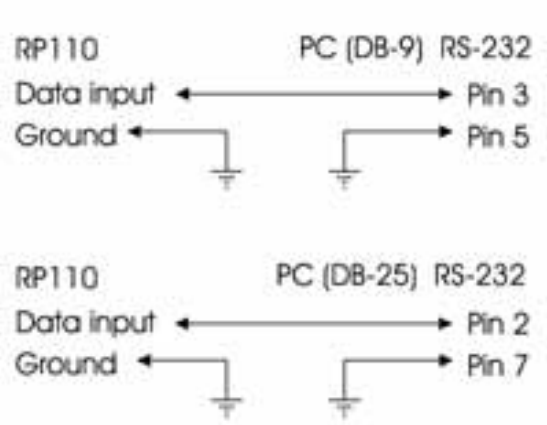
If all 12 list positions are full, one sentence will have to be deleted. Press and hold the ▼ and ✚ keys for 10 seconds. Use the ▼ and ▲ keys to scroll through the list. When the sentence to be deleted is displayed, press the ✚ key for 1/2 second.

Manually Selecting A Data Channel

The SW RP03 searches each of the four data channels for the desired sentence. When a matching sentence is found the SW RP03 stops at that channel and displays the data. To select between two or more data channels containing the same sentence, press and hold the ✚ key for 3 seconds. The SW RP03 will search the other channels for the sentence. If the sentence is only available on the one channel, it will return back to the original.

Downloading New NMEA Sentences

You can add up to 10 new sentences to Table 1 using a PC and a serial data cable connected to channel 4 on the back of the RP03 as shown in Figure 4. To upload a new sentence to the RP03, press and hold the ▼ and ▲ keys for 10 seconds. The instrument is ready for data transfer when "rdY" is displayed. Now run the SW RP03 program software. When a beep is heard check the display for the status of the transfer, if "good" is displayed, the process was successful. If "bAd" is displayed, the process was unsuccessful, try the download process again.



NMEA 0183 Sentences - TABLE 1

1 USER PROGRAMMED
2 USER PROGRAMMED
3 USER PROGRAMMED
4 USER PROGRAMMED
5 USER PROGRAMMED
6 USER PROGRAMMED
7 USER PROGRAMMED
8 USER PROGRAMMED
9 USER PROGRAMMED
10 USER PROGRAMMED
11 $AGAAM WAYPOINT ARRIVAL ALARM RADIUS
12 $AGAPB MAGNITUDE OF CROSSTRACK ERROR
13 $AGAPB BEARING ORIGIN TO DESTINATION
14 $AGAPB BEARING PRESENT TO DESTINATION
15 $AGAPB HEADING TO STEER TO DESTINATION
16 $AGBEC BEARING DEGREES TRUE
17 $AGBEC BEARING DEGREES MAGNETIC
18 $AGBEC DISTANCE NAUTICAL MILES
19 $AGBOD BEARING TRUE
20 $AGBOD BEARING MAGNETIC

21 $AGBWC BEARING TO WAYPOINT DEGREES TRUE
22 $AGBWC BEARING TO WAYPOINT DEGREES MAG.
23 $AGBWC DISTANCE NAUTICAL MILES
24 $AGBWC BEARING TO WAYPOINT DEGREES TRUE
25 $AGBWR BEARING TO WAYPOINT DEGREES MAG.
26 $AGBWR DISTANCE NAUTICAL MILES
27 $AGBWW BEARING WAYPOINT TO WAYPOINT TRUE
28 $AGBWW BEARING WAYPOINT TO WAYPOINT MAG.
29 $AGHSC COMMANDED HEADING DEGREES TRUE
30 $AGHSC COMMANDED HEADING DEGREES MAG.
31 $AGVBW LONGITUDNAL WATER SPEED KNOTS
32 $AGVBW TRANSVERSE WATER SPEED KNOTS
33 $AGVBW LONGITUDNAL GROUND SPEED KNOTS
34 $AGVBW TRANSVERSE GROUND SPEED KNOTS
35 $AGWCV WAYPOINT CLOSURE VELOCITY KNOTS
36 $AGWNC DISTANCE WAYPT TO WAYPT N.MILES
37 $AGWNC DISTANCE WAYPOINT TO WAYPOINT KM.
38 $APAAM WAYPOINT ARRIVAL ALARM RADIUS
39 $APAPB MAGNITUDE OF CROSSTRACK ERROR
40 $APAPB BEARING ORIGIN TO DESTINATION
41 $APAPB BEARING PRESENT TO DESTINATION
42 $APAPB HEADING TO STEER TO DESTINATION
43 $APBEC BEARING DEGREES TRUE
44 $APBEC BEARING DEGREES MAGNETIC
45 $APBEC DISTANCE NAUTICAL MILES
46 $APBOD BEARING TRUE
47 $APBOD BEARING MAGNETIC
48 $APBWC BEARING TO WAYPOINT DEGREES TRUE
49 $APBWC BEARING TO WAYPOINT DEGREES MAG.
50 $APBWC DISTANCE NAUTICAL MILES
51 $APBWR BEARING TO WAYPOINT DEGREES TRUE
52 $APBWR BEARING TO WAYPOINT DEGREES MAG.
53 $APBWR DISTANCE NAUTICAL MILES
54 $APBWW BEARING WAYPOINT TO WAYPOINT TRUE
55 $APBWW BEARING WAYPOINT TO WAYPOINT MAG.
56 $APHSC COMMANDED HEADING DEGREES TRUE
57 $APHSC COMMANDED HEADING DEGREES MAG.
58 $APVBW LONGITUDNAL WATER SPEED KNOTS
59 $APVBW TRANSVERSE WATER SPEED KNOTS
60 $APVBW LONGITUDNAL GROUND SPEED KNOTS
61 $APVBW TRANSVERSE GROUND SPEED KNOTS
62 $APWCV WAYPOINT CLOSURE VELOCITY KNOTS
63 $APWNC DISTANCE WAYPT TO WAYPT N.MILES
64 $APWNC DISTANCE WAYPOINT TO WAYPOINT KM
65 $DEDCN POSITION UNCERTAINTY N.MILES
66 $DFAPB BEARING ORIGIN TO DISTANCE
67 $DFAPB BEARING PRESENT TO DESTINATION
68 $DFAPB HEADING TO STEER TO DESTINATION
69 $DFABE BEARING DEGREES TRUE
70 $DFBEC BEARING DEGREES MAGNETIC
71 $DFBEC DISTANCE NAUTICAL MILES
72 $DFBOD BEARING TRUE
73 $DFBOD BEARING MAGNETIC
74 $DFBWC BEARING TO WAYPOINT DEGREES TRUE
75 $DFBWC BEARING TO WAYPOINT DEGREES MAG.
76 $DFBWC DISTANCE NAUTICAL MILES
77 $DFBWR BEARING TO WAYPOINT DEGREES TRUE
78 $DFBWR BEARING TO WAYPOINT DEGREES MAG.
79 $DFBWR DISTANCE NAUTICAL MILES
80 $DFBWW BEARING WAYPOINT TO WAYPOINT TRUE
81 $DFBWW BEARING WAYPOINT TO WAYPOINT MAG.
82 $DFHDG MAGNETIC SENSOR HEADING DEGREES
83 $DFHDT HEADING DEGREES TRUE
84 $DFWCV WAYPOINT CLOSURE VELOCITY KNOTS
85 $DFWNC DISTANCE WAYPT TO WAYPT N.MILES
86 $DFWNC DISTANCE WAYPOINT TO WAYPOINT KM
87 $GPBWC BEARING WAYPT TO WAYPT DEG. TRUE
88 $GPBWC BEARING WAYPT TO WAYPT DEG. MAG.
89 $GPBWC DISTANCE NAUTICAL MILES
90 $GPBWR BEARING WAYPT TO WAYPT DEG. TRUE
91 $GPBWR BEARING WAYPT TO WAYPT DEG. MAG.
92 $GPBWR DISTANCE NAUTICAL MILES
93 $GPRMB CROSS TRACK ERROR NAUTICAL MILES
94 $GPRMB RANGE TO DESTINATION NAUT. MILES
95 $GPRMB BEARING TO DESTINATION DEG. TRUE
96 $GPRMB DESTINATION CLOSING VELOCITY KTS
97 $GPRMC SPEED OVER GROUND KNOTS
98 $GPRMC COURSE OVER GROUND DEGREES TRUE
99 $HCBOD BEARING TRUE
100 $HCBOD BEARING MAGNETIC
101 $HEBOD BEARING TRUE
102 $HEBOD BEARING MAGNETIC
103 $HNBOD BEARING TRUE
104 $HNBOD BEARING MAGNETIC
105 $IIXDR,A ANGULAR DISPLACEMENT DEGREES
106 $IIXDR,C TEMPERATURE DEGREES CELCIUS
107 $IIXDR,D LINEAR DISPLACEMENT METERS
108 $IIXDR,F FREQUENCY HERTZ
109 $IIXDR,G GENERIC
110 $IIXDR,H HUMIDITY PERCENT
111 $IIXDR,I CURRENT AMPERES
112 $IIXDR,N FORCE NEWTONS
113 $IIXDR,P PRESSURE PASCAL OR BAR
114 $IIXDR,R FLOW RATE LITERS/SECOND
115 $IIXDR,S SWITCH OR VALVE
116 $IIXDR,T TACHOMETER RPM
117 $IIXDR,U VOLTAGE VOLTS
118 $IIXDR,V VOLUME CUBIC METERS
119 $INBOD BEARING TRUE
120 $INBOD BEARING MAGNETIC
121 $PBVE RH-30 ELAPSED TIME HOURS
122 $PBVE RH-30 ELAPSED TIME MIN. AND SEC.
123 $PBVE RH-30 ENGINE HOURS AND MINUTES
124 $PBVE RH-30 ENGINE RPM
125 $PBVE T-30 TEMPERATURE DEG. FAHRENHEIT
126 $PBVE CH-30 WINDLASS BATTERY VOLTAGE
127 $PBVE CH-30 RHODE OUT
128 $PBVE CT-30 TIME 24 HOURS
129 $PBVE OP-30 PRESSURE P.S.I.
130 $PBVE FU-30 FUEL REMAINING LTRS OR GALS
131 $PBVE FU-30 FUEL USED LITRES OR GALLONS
132 $PBVE FU-30 CONSUMPTION LTRS OR GAL./HR
133 $SDDBK DEPTH BELOW KEEL FEET
134 $SDDBK DEPTH BELOW KEEL METERS
135 $SDDBK DEPTH BELOW KEEL FATHOMS
136 $SDDBS DEPTH BELOW SURFACE FEET
137 $SDDBS DEPTH BELOW SURFACE METERS
138 $SDDBS DEPTH BELOW SURFACE FATHOMS
139 $SDDBT DEPTH BELOW TRANSDUCER FEET
140 $SDDBT DEPTH BELOW TRANSDUCER METERS
141 $SDDBT DEPTH BELOW TRANSDUCER FATHOMS
142 $SDDPT DEPTH RELATIVE TO TRANSDUCER MTRS
143 $TIROT RATE OF TURN DEGREES/MINUTE
144 $TIRPM SPEED RPM

145 $TIRPM PROPELLER PITCH % OF MAX
146 $VDMTW WATER TEMPERATURE DEGREES CELCIUS
147 $VDVHW HEADING DEGREES TRUE
148 $VDVHW HEADING DEGREES MAGNETIC
149 $VDVHW SPEED KNOTS
150 $VDVHW SPEED KM/HOUR
151 $VDVLW TOTAL DISTANCE N.MILES
152 $VDVLW DISTANCE SINCE RESET N.MILES
153 $VMMTW WATER TEMPERATURE DEGREES CELCIUS
154 $VMVHW HEADING DEGREES TRUE
155 $VMVHW HEADING DEGREES MAGNETIC
156 $VMVHW SPEED KNOTS
157 $VMVHW SPEED KM/HOUR
158 $VMVLW TOTAL DISTANCE N.MILES
159 $VMVLW DISTANCE SINCE RESET N.MILES
160 $VWMTW WATER TEMPERATURE DEGREES CELCIUS
161 $VWVHW HEADING DEGREES TRUE
162 $VWVHW HEADING DEGREES MAGNETIC
163 $VWVHW SPEED KNOTS
164 $VWVHW SPEED KM/HOUR
165 $VWVLW TOTAL DISTANCE N.MILES
166 $VWVLW DISTANCE SINCE RESET N.MILES
167 $WIMDA BAROMETRIC PRESS. INCH. OF MERCURY
168 $WIMDA BAROMETRIC PRESSURE BARS
169 $WIMDA AIR TEMPERATURE DEGREES CELCIUS
170 $WIMDA RELATIVE HUMIDITY %
171 $WIMDA ABSOLUTE HUMIDITY %
172 $WIMDA DEWPOINT DEGREES CELCIUS
173 $WIMDA WIND DIRECTION DEGREES TRUE
174 $WIMDA WIND DIRECTION DEGREES MAGNETIC
175 $WIMDA WIND SPEED KNOTS
176 $WIMDA WIND SPEED METERS/SECOND
177 $WIMWD WIND DIRECTION DEGREES TRUE
178 $WIMWD WIND DIRECTION DEGREES MAGNETIC
179 $WIMWD WIND SPEED KNOTS
180 $WIMWD WIND SPEED METERS/SECOND
181 $WIMWV WIND ANGLE DEGREES
182 $WIVWR RELATIVE WIND DIRECTION DEGREES
183 $WIVWR SPEED KNOTS
184 $WIVWR SPEED METERS/SECOND
185 $WIVWR SPEED KM/HOUR
186 $YXDBK DEPTH BELOW KEEL FEET
187 $YXDBK DEPTH BELOW KEEL METERS
188 $YXDBK DEPTH BELOW KEEL FATHOMS
189 $YXDBS DEPTH BELOW SURFACE FEET
190 $YXDBS DEPTH BELOW SURFACE METERS
191 $YXDBS DEPTH BELOW SURFACE FATHOMS
192 $YXDBT WATER DEPTH BELOW TRANSDUCER FT.
193 $YXDBT WATER DEPTH BELOW TRANSDUCER MTRS
194 $YXDBT WATER DEPTH BELOW TRANSDUCER FATH
195 $YXDPT DEPTH RELATIVE TO TRANSDUCER MTRS
196 $YXXDR,A ANGULAR DISPLACEMENT DEGREES
197 $YXXDR,C TEMPERATURE DEGREES CELCIUS
198 $YXXDR,D LINEAR DISPLACEMENT METERS
199 $YXXDR,F FREQUECY HERTZ
200 $YXXDR,G GENERIC
201 $YXXDR,H HUMIDITY PERCENT
202 $YXXDR,I CURRENT AMPERES
203 $YXXDR,N FORCE NEWTONS
204 $YXXDR,P PRESSURE PASCAL OR BAR
205 $YXXDR,R FLOW RATE LITRES/SECOND
206 $YXXDR,S SWITCH OR VALVE
207 $YXXDR,T TACHOMETER RPM
208 $YXXDR,U VOLTAGE VOLTS
209 $YXXDR,V CUBIC METERS
210 TO BE DEFINED

Other Seiwa Products:

It is possible to connect to SW RP03, all the multifunction plotters Seiwa.
- smart GPS antenna.
- Black Box Fish Finder plus the trasducer.
- All trasducers whith NMEA 0183 exit.
- SW RP05 deep sounder (plus trasducer)

Note:

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